

INCH-POUND

MIL-C-17/193B
20 February 1991
SUPERSEDING
MIL-C-17/193A(EC)
10 August 1987

MILITARY SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, COAXIAL,
50 OHMS, M17/193-00001 UNARMORED, M17/193-00002 ARMORED

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist
of this specification sheet and the issue of the following specification
listed in that issue of the Department of Defense Index of Specifications
and Standards (DODISS) specified in the solicitation: MIL-C-17.

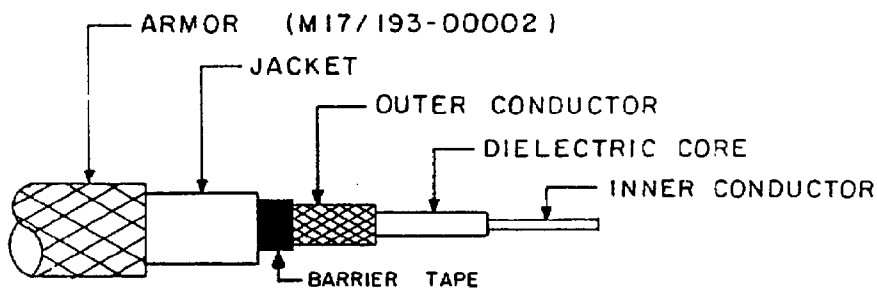


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details			
Inner conductor	Solid bare copper wire. Diameter: .195 inch \pm .002.			
Dielectric core	Type A-1: Solid polyethylene. Diameter: .680 inch \pm .010.			
Outer conductor	Single braid of AWG No. 30 bare copper wire. Diameter: .740 inch, maximum.			
	<u>Alternates</u>			
	Coverage:	97.7% nominal	97.8% nominal	97.2% nominal
	Carriers:	24	36	48
	Ends:	14	9	7
	Picks/inch:	3.1 \pm 10%	4.0 \pm 10%	5.6 \pm 10%

TABLE I. Description - Continued.

Components	Construction details
Barrier tape	A .001 inch thick polyester tape faced with a .002 inch thick layer of aluminum. The tape will be applied with a 50% lap, aluminum face toward the outer conductor. Diameter: .752 inch maximum.
Jacket	Cross-linked polyolefin Diameter: .870 inch \pm .010.
Armor (M17/193-00002 only)	Single braid of aluminum-alloy wire Diameter: .945 inch maximum.

ENGINEERING INFORMATION:

Continuous working voltage: 8,000 V rms, maximum.

Operating frequency: 1 GHz, maximum.

Velocity of propagation: 65.9 percent, nominal.

Power rating: See figure 2.

Operating temperature range: -30°C to +85°C.

Inner conductor properties:

DC resistance (maximum at +20°C): 0.0278 ohm per 100 feet.

Elongation: 30 percent, minimum.

Engineering notes: This cable is useful in general purpose, medium low temperature applications (for M17/193-00001, see connector series "N", "C", and "SC" in accordance with MIL-C-39012; for M17/193-00002, see connector series "LC" in accordance with MIL-C-3650 and "LT" in accordance with MIL-C-26637). These cables were redesigned to meet the vertical flame test.

REQUIREMENTS:

Dimensions, configuration, and descriptions: See figure 1 and table I.

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Applicable.

Eccentricity: 5 percent, maximum.

Adhesion of conductors:

Inner conductor to core: 60 pounds, minimum; 600 pounds, maximum.

Aging stability: +98°C \pm 2°C.

Cold bend: -30°C \pm 2°C.

Dimensional stability: $+85^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

Inner conductor from core: .200 inch, maximum.

Inner conductor from jacket: .400 inch, maximum.

Contamination: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2.0 percent, maximum.

Halogen content: 0.2 percent, maximum.

Immersion test:

Tensile strength, percent of unaged minimum: 50

Elongation, percent of unaged minimum: 50

Smoke index: 25 maximum.

Toxicity index: 5 maximum.

Durometer hardness: (Type A) 80 minimum.

Weathering: Applicable.

Abrasion resistance: 75 cycles minimum (jacket only).

Tear strength: 35 pounds per inch minimum.

Heat distortion: 30 percent maximum distortion.

Physical tests on unaged jacket:

Tensile strength: 1,300 psi, minimum.

Elongation, 160 percent, minimum.

Physical tests on aged jacket:

Air oven:

Tensile strength, percent minimum: 60

Elongation, percent minimum: 60

Hot oil immersion:

Tensile strength, percent minimum: 50

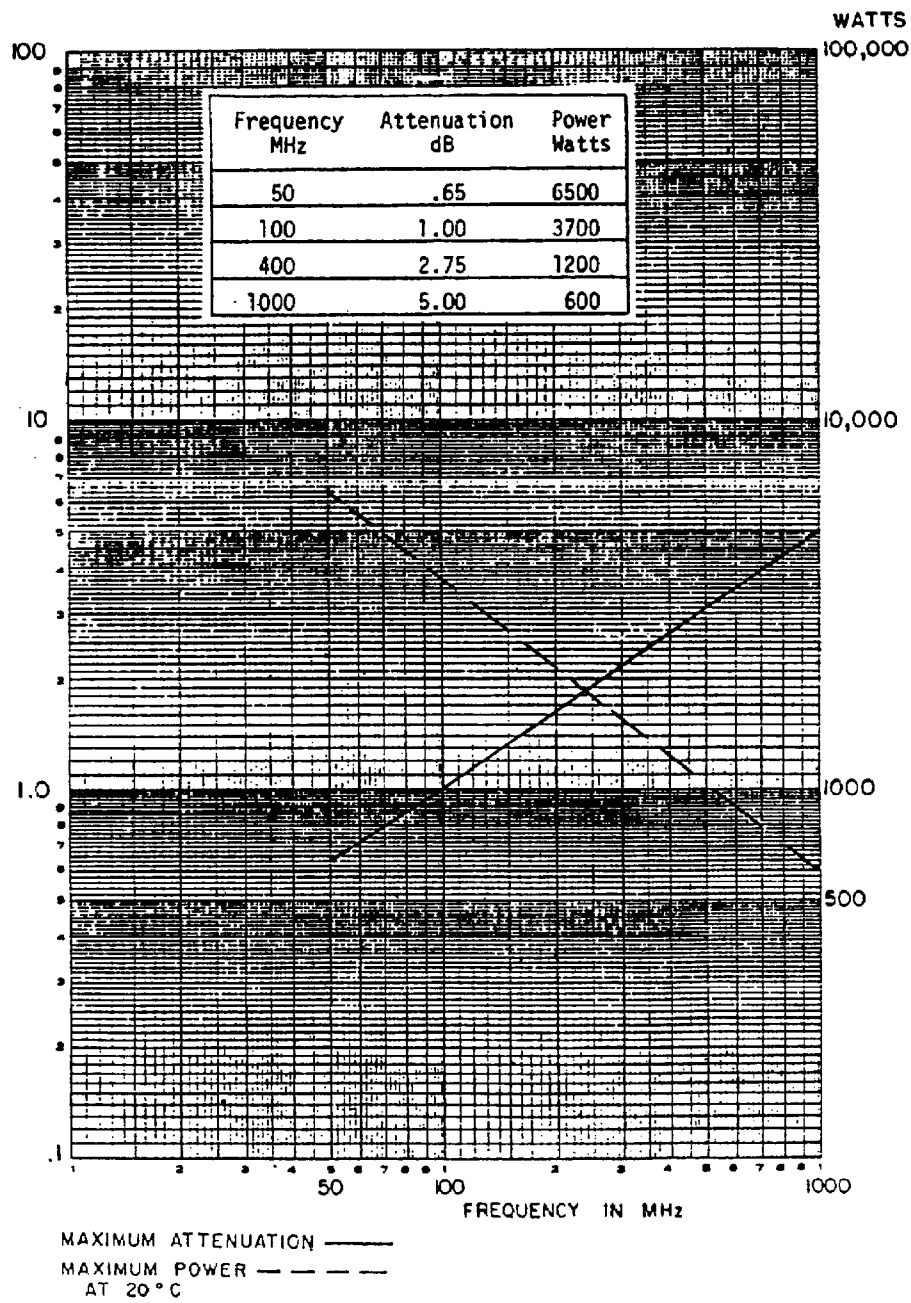
Elongation, percent minimum: 50

Tensile strength and elongation: 1,300 psi, 160 percent minimum.

Weight:

52.1 pounds per 100 feet, maximum (M17/193-00001).

57.1 pounds per 100 feet, maximum (M17/193-00002).

FIGURE 2. Power rating and attenuation.

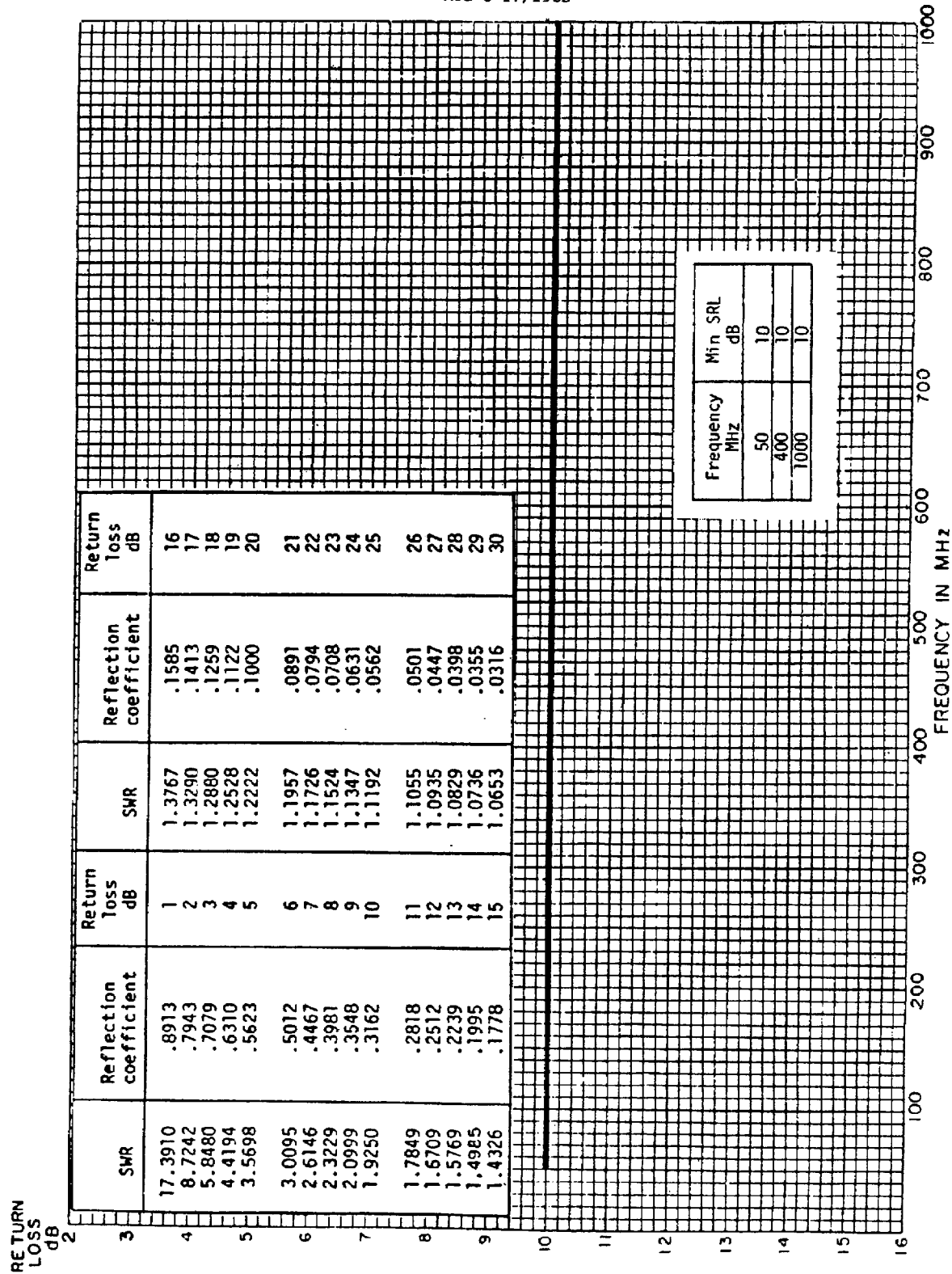


FIGURE 3. Structural return loss.

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Electrical:

Spark test: 8,000 V rms, minimum.

Voltage withstanding: 22,000 V rms, minimum.

Corona extinction voltage: 11,000 V rms minimum.

Characteristic impedance: 50 \pm 2 ohms.

Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 32.2 pF per foot, maximum.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Part or Identifying Number (PIN):

M17/193-00001 unarmored.

M17/193-00002 armored.

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

CONCLUDING MATERIAL -

Custodians:

Army - CR
Navy - EC
Air Force - 85

Review activities:

Army - AR, MI
Navy - SH
Air Force - 11, 80, 99
DLA - ES, IS

User activities:

Army - AT, ME
Navy - AS, MC, OS
Air Force - 19

Preparing activity:

Navy - EC

Agent:

DLA - ES

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